There is a point connected with angling which is raised by Captain Dick, but not for the first time, and which demands investigation. It seems to be beyond question that, over the whole of Great Britain, trout are every year becoming scarcer. It is very seldom that the angler now-a-days makes a basket equal to what would have been called a very common take a score of years ago. So alarming has been this decrease that district associations are being formed for the purpose of watching and protecting the spawning grounds in their neighbourhood. The falling off is probably due to a variety of causes, such as over-fishing, pollution of streams, want of protection of spawning fish and spawning beds, the prevalence of pike, &c. It is certain that many streams and lakes, easy of access to populous districts, suffer from being over-fished; but the example of Loch Leven, already referred to, shows what may be done if proper precautions be taken. This lake is only 3½ miles by 2½, and 9 miles in circuit, and is open to anglers from all quarters (by paying a certain sum per hour) during the four months May, June, July, and August. The rest of the year the lake is closed, and the spawning grounds are carefully watched. There are both pike and perch in the lake, but nets are freely used to keep down these marauders. The results of these measures are worthy of notice. For the last fifteen years the takes have been gradually increasing, and last year upwards of 17,000 trout were taken by the rod. During the months of May and June this year nearly 9,000 have been taken, and it may be added that the average weight of Loch Leven trout is a little under 1 lb. What has been done by private enterprise for this lake might and should be done by Government for all the lakes and rivers in the country. There is no reason, that we know of, why there should not be a close time for trout as well as for salmon. The pollution of rivers by public works is a more difficult question to deal with; but surely something could be done to prevent such wholesale destruction as that, for example, which took place in the first week of July this year in the rivers Teviot and Ribble. In the former of these rivers tens of thousands of fish, including trout, smelt, grayling, and even salmon, were poisoned in one day. Unless some action be taken by Government strictly prohibiting manufacturers from sending their poisonous refuse into our rivers, not only will the fish in these soon become extinct, but the rivers themselves thus impregnated will act as open sewers generating and propagating disease in every direction. With a little judicious legislation, the quantity of fish obtained in fresh water might be so largely increased as to become important as an item of food for the people. We have indicated how this might be done with regard to trout, &c. With regard to salmon, all that is necessary to do is to blast the rocks at the Falls of the Tummel, the Gary, and the Spean, in Scotland, and of the Axe, and other rivers in England, and the area of the spawning grounds of this monarch of our rivers would at once be doubled. This could be done at little expense, due allowance being of course made for vested rights and any interests involved

A single glance at any page of Captain Dick's book is sufficient to show that he is more accustomed to wield the rod than the pen; indeed we fail to see the *raison d'être* of the gallant captain's work. He has, it is true, mentioned one or two things worth setting down in an article or essay, but not worth writing a book about. His list of artificial flies is very full and may be of service. The only contribution to Natural History we can find is his statement—which we are inclined to accept as fact—that "although fish generally lie with their heads pointing up stream, they never, by any chance, take a fly in that position, but always make a decided turn in the act of rising, and take the fly with their heads pointing down stream." He adduces this as a reason for fishing down stream, of which practice, in opposition to the best anglers, he is a strenuous advocate. As to fishing with minnows, he prefers the ordinary metal kill-devils to natural minnows and to all other imitations. In this, also, experienced anglers will generally disagree with him. There is no lure more deadly for large trout, in certain seasons, than the natural minnow, and next after that, we should say, is the phantom minnow. In his remarks on pike-fishing, the author does not refer to the spoon-bait, which nevertheless, in lakes, especially in dull weather, may safely be backed against any other lure. Why does the author almost always use the word "fisherman," and only once the much more precise term "angler"? Strictly speaking, "fisherman" is a generic term, and applies equally to net and rod-fishers, but by common usage is generally employed to denote the former; whereas "angler" is a distinctive term which can be applied only to the rod-fisher.

MIVART'S "ELEMENTARY ANATOMY"

Lessons in Elementary Anatomy. By St. George Mivart, F.R.S. Pp. 535. (Macmillan, 1873.)

THIS modest volume is one of the series to which Huxley's "Physiology," Oliver's "Botany," and Roscoe's "Chemistry" belong. Like them it has the indispensable merit of being an elementary manual written by a master of the subject; for while special investigations may be often well performed by advanced students, primers and text-books can only be properly written by experienced teachers.

The plan of the book is to describe in a popular manner the various bones and other parts of human anatomy, excepting the reproductive organs, and then to point out the chief variations among other vertebrata. It would perhaps have been better to have called it "Elementary Lessons in the Comparative Anatomy of Vertebrate Animals:" for as all the organs are used to illustrate those of man, consideration of non-vertebrate classes is very reasonably omitted. Moreover, for reasons given in the preface, with which every teacher of the subject will probably agree, the largest space is given to the account of the endoskeleton. The whole forms a collection of facts, accurate in detail, carefully arranged, and clearly described. One would think there must be slips among so many isolated statements, but we have failed to detect one in a careful perusal of about 300 pages. The sixth chapter contains a review of the general morphology of the vertebrate skeleton, and here Mr. Mivart's well-known views, communicated to the Linnæan and Zoological Societies, are expounded fully but simply. Without admitting all his positions, as for example the

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homology of the *trabeculæ cranii*, most of what is stated in this chapter is well enough established to form part of a manual for students of comparative anatomy.

But who are these students? No one could follow the closely printed pages of description here given, without a good general acquaintance with human anatomy and a thorough knowledge of the human skeleton. For this reason we think it would have been better to have curtailed or even omitted the preliminary accounts of each organ in man, because they are not sufficient alone, and there are many excellent treatises on this subject already. If it is answered that the book is really intended for boys and girls at school, then the details given, especially in osteology, are far too numerous: in fact they would be unintelligible without a good museum, and learning zygosphenes and hypapophyses without seeing them is far worse mental training than *Barbara Celarent*, or the verbs in -μι. For the second class of readers mentioned in the preface, teachers, medical students, and others acquainted with human anatomy, this little treatise will be found just what they want in order to learn "its more significant relations to the structure of other animals." The only defect they will find is the omission of the organs of reproduction and the structure of the ovum.

The woodcuts are generally sufficient, and some of the diagrams are remarkably ingenious and useful. Some are, however, much too small, *e.g.* the diagram of the skull, Fig. 197, and all the figures of entire skeletons, as 200; while others, as 137, representing the shoulder-girdle of *Hemidactylus*, after Parker, greatly need the shading and tinting of the original drawing. The plan of repeating an illustration whenever it is referred to is not often adopted in English books, but on the whole it is, we think, the most convenient.

Experience will show what class of students will really make most use of Mr. Mivart's Lessons. We heartily recommend them to all medical students and zoologists who have access to a good museum. P. S.

OUR BOOK SHELF

Die Robbe und die Otter (Phoca vitulina *et* Lutra vulgaris) *in Ihrem Knochen-und Muskel-skelet.* Eine anatomisch-zoologicgische Studie von Dr. J. C. G. Lucae. 102 pp. 15 plates. (Frankfort-on-the-Main, 1873.)

UNDER this title the distinguished anatomist, Prof. Lucae, has contributed to the "Transactions of the Senckenbergian Society of Naturalists," an elaborate treatise upon the anatomy of the Common Seal (*Phoca vitulina*). The osteology of *Phoca* is minutely described, and every part of its skeleton compared with the corresponding portions of that of the Otter—one of its nearest allies among the terrestrial Carnivora. Comparisons with other mammals are also given.

Fifteen well-executed plates illustrate this excellent memoir, which, when completed (the first part being only now before us) will leave little to be added to our information as to the osteology of the true Seals (*Phocidæ*.) To our knowledge of the structure of the two other families of the marine Carnivora (the Trichecidæ and Otariidæ) we have lately received a valuable contribution in the shape of Dr. Murie's Memoirs on the Walrus and Sea-lion, published in the Zoological Society's "Transactions," so that great progress has lately been made towards a perfect understanding of the osseous structure of the marine Carnivora.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.*]

Agassiz and Forbes

MR. GEORGE FORBES has, in NATURE of May 22, given his version of the controversy between Agassiz and Forbes. I had no intention, in a former note, of reviving, for the benefit of the readers of NATURE, this unpleasant subject; but simply wished to protest against the *ex cathedra* statements of the reviewer of Tyndall. The materials for an impartial discussion of the history of glacier work are accessible to all investigators, and when it comes to be written, Agassiz and Forbes will obtain due credit for their share of the work. One of the points at issue between Forbes and Agassiz is not a matter "of facts to be proved or disproved by facts." The conversation between Agassiz and Forbes (Heath as witness for Forbes) held on the first day of their sojourn on the Aar Glacier, refers simply to *a difference of opinion on the explanation of certain bands* (observed previously by several persons, and well known to Agassiz). The nature of these bands has to this day remained problematical. and why Agassiz, when writing to Humboldt that *he had observed these bands at a depth of* 120 *ft. in the body of the glacier*, should give any credit to Forbes passes all understanding. This observation was made after Forbes's departure, and Agassiz certainly needed no "reconciliation with his conscience" to describe this as "le fait le plus nouveau que *j'ai* observé." The testimony of Mr. Heath is of no value, for it certainly would be the height of presumption, in a man without any previous acqnaintance with glaciers, to undertake to decide in a few lines, a point to this day a subject of controversy among investigators of glaciers; his endorsement of the claims of Forbes is as ridiculous as the attempt made by a prominent Swiss geologist (who gives his testimony in favour of Forbes), to ignore the claims of Agassiz, by passing his name over in silence when writing the history of geological science in Switzerland.

I would also remind Mr. George Forbes and the editors of the "Life and Letters of Forbes," that Agassiz's affirmation carries as great weight as that of Forbes or Mr. Heath. Forbes is entitled to whatever credit there is in his explanation of these bands and no more, an explanation which has not been adopted by Agassiz for the very good reason that he did not deem it a satisfactory one, and did not attach to it the same importance which Forbes did. Agassiz expressed to Forbes considerable surprise at the appearance of the bands which presented that morning peculiar conditions, not usually seen except after a hard rain, and on the strength of this surprise Forbes lays claim to the discovery of the bands, and boldly accuses Agassiz of knowing nothing about them at the time of his visit. In investigations carried on for several years, as those of the glacier of the Aar under Agassiz, it was most natural that special points should not always be uppermost in the mind of the investigator, however interesting they might appear to a visitor; this will fully account for any want of interest shown by Agassiz on first meeting Forbes and discussing the veined structure of the ice.

Agassiz certainly owed nothing to Forbes, who was an invited guest on the glacier of the Aar, a novice in glacial work. No attack was made upon Forbes, as is stated by Mr. George Forbes; it originated with him. In a letter addressed to Forbes by Agassiz when he first discovered that Forbes had published, independently as his own, observations made upon the glacier of the Aar, during his stay with the Swiss party, he says: "the idea that in thought you conceived the project of an independent publication did not come to me for an instant. I should have thought I did you injustice by such a supposition." Agassiz felt *he* "had been deeply wronged" by the course taken by Forbes; he made no answer to Forbes, and paid no further attention to the subject, not because there was "no room for discussion," but because the tone adopted by Forbes was so insulting and overbearing as to render all further discussion impossible without its degenerating into the personalities afterwards indulged in by Forbes, in his letters to his friends, which the editors of his Life and Letters have taken special pleasure in reproducing.

Forbes did not hesitate to bring Mr. Heath uninvited to the glacier of the Aar, probably to act as his witness and swel the party, yet both he and his son regard the presence o friends of Agassiz, to assist him in his work, a most monstrous circumstance. Pioneers usually find it difficult to explore the

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